REACHING OUT:

TRANSLOAD EXTENDS THE ACCESSIBLE MARKET IN HALIFAX

JAMES D. FROST

STEPHEN KYMLICKA

The AIMS Atlantica Ports Series #3

Charles Cirtwill and Ian Munro

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Atlantic Institute for Market Studies

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a) initiating and conducting research identifying current and emerging economic and public policy issues facing Atlantic Canadians and Canadians more generally, including research into the economic and social characteristics and potentials of Atlantic Canada and its four constituent provinces;

b) investigating and analyzing the full range of options for public and private sector responses to the issues identified and acting as a catalyst for informed debate on those options, with a particular focus on strategies for overcoming Atlantic Canada's economic challenges in terms of regional disparities;

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ABOUT THE SERIES

Atlantica is a region broadly composed of the Atlantic provinces, south-shore Quebec, the northern tier of New England states, and upstate New York. These territories have a number of characteristics in common – similar demographics, diversity, and migration; a shared history; and interrelated transport issues. These common qualities have led to common public policy interests.[1] The dominant container port in Atlantica is the Port of Halifax, while on a tonnage basis, the largest port in Atlantica is Canso, a significant energy hub. The ports of Saint John and Come-by-Chance are also significant players in the energy transfer business.

Ports provide a key service in the transportation network that moves goods from producer to consumer. All goods and network connections do not have the same needs, however, and so the strategy of any port must be tailored to realistic trade flows.

The Atlantica Ports Series takes a comprehensive look at the existing flows, industries, and services that surround Atlantica and asks: What opportunities exist for Atlantic ports to increase volumes? One option would be to extend the regional market by expanding the distribution function. This paper evaluates the conditions for port-distribution synergies and focuses on the use of transload facilities in particular.

[1] For further information, please see <http://www.atlantica.org>.

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Jim Frost started his career as Director of Marketing with the Halifax-Dartmouth Port Development Commission. He left there to become Vice President of UM Shipping, a short sea shipping service that operated between Halifax and Boston. He was also Marketing Manager for Marine Atlantic, a large Crown-owned ferry service that operated throughout Atlantic Canada. While there, he developed a new cruise product, "Cruising Labrador," using the company's underutilized capacity.

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EXECUTIVE SUMMARY

Warehousing and distribution is of great interest to the Port of Halifax because it can be used to attract shipping lines and vice versa.

There are three basic strategies available to a port: a *gateway* strategy for large-scale efficient ship to land transfers servicing remote inland markets; a *hub* strategy for large-scale efficient ship to ship transfers servicing remote overseas markets; and a *regional* strategy which provides diverse specialized services. Historically, Halifax has accepted business in all three modes: gateway by rail (72 per cent), hub by ship (6 per cent) and regional by truck (22 per cent).

Port-led collection and distribution of goods in the Atlantic Provinces is not just handled through Halifax but also Montreal and even Vancouver. Goods routed through Montreal or Vancouver are often warehoused and distributed through very large centres in the Toronto-Montreal corridor. These centres overcome increased transportation costs to Atlantic Canada through economies of scale.

Recently, the industry has seen a blurring of the boundaries for small-market, high-cost specialized services and mass-market, low-cost commodity services. There are several reasons for this:

1) Recent gains in fuel efficiency and better roads have lowered costs and increased the number of markets now viable by truck.
2) Modern logistics management has allowed better use of resources (e.g., load balancing, triangulation).
3) Overall economic growth has allowed new economies of scale.
4) Innovations in distribution have lowered costs for distance hauling and extended market boundaries.
5) Change in the business model of class-1 railways to focus on balanced, long-haul traffic has forced greater compliance to commodity standards, but their departure from regional competition has allowed for the expansion of regional services by class-2 railways.

These competing pressures are best exemplified in Canadian Tire which is simultaneously increasing its commitment to regional distribution through the transload model in Halifax and building a new distribution centre in Montreal to service Quebec and Atlantic Canada.

One strategy for growing port traffic is the use of transload facilities, where the contents of ocean containers are unpacked, possibly resorted and repacked into truck trailers for delivery to individual stores. There are some important secondary benefits of this strategy including making containers available for local exporters. Recently, this strategy has received a boost by the construction of a new facility by Consolidated Fastfrate, an agreement by the Canadian Retail Shippers Association to do transloading through an Armour Trucking facility, and the public interest in CN building another facility.

This report takes an in-depth look at the state of warehousing and distribution in Halifax. It then discusses the strengths and weaknesses of a generic transload strategy and the potential application of such a strategy to the conditions in Halifax. The report concludes that the strategy makes a great deal of sense for Halifax. In fact, the potential growth could be 25 per cent; however, the exact size of the opportunity will depend on individual market forces across a broad range of industries.

INTRODUCTION

Distribution and logistics capabilities are increasingly important for the modern port because strategic location is not enough. Ports that have experienced the most dramatic growth over recent years have built and nurtured expansive distribution networks. This is most evident in Asia where governments have built mega-ports from nothing, based upon an understanding of population and industrial needs. However, there also have been dramatic examples in the West including hubs (pivots) like Gioia Tauro in Italy, Algeciras in Spain and gateways (load centres) like Savannah in Georgia.[2] To remain competitive, historic ports have undertaken massive projects to improve their distribution capabilities (e.g., Los Angeles/Long Beach and the Alemeda Corridor project).

Not all distribution and logistics projects have been successful; it is critical that capabilities match opportunity. For example, the Port Authority of New York and New Jersey has tried to develop the Port Inland Distribution Network (PIDN) – a collection of non-truck feeder services - as a way of reducing on-dock time for containers and increasing throughput. This initiative received federal funding for infrastructure and each container has been subsidized $25 by the Port Authority during the start-up of the service. Nonetheless, trucking costs remain sufficiently low, such that the flagship barge service to Albany has been suspended and other nodes have been delayed.[3]

One strategy to improve distribution is the addition of warehouse space (e.g., Savannah) or transload centres (e.g., Seattle or Vancouver). Because of the small local market, Halifax has pursued the attraction of transload centres. This strategy was actively promoted in the 2004 *Greater Halifax Distribution Study*.[4] It has met with some success, attracting two new transload facilities.

[2] Frost, 2006
[3] Kymlicka, 2006
[4] Marinova Consulting, 2004

The port of Halifax performs two dominant roles: that of a gateway to the continental interior (about 75 per cent of the business) and as a regional port (about 22.5 per cent of the business).[5] These two roles were discussed in detail in the second paper in this series, *Everybody Wins: Why Growing the Port of Halifax Matters to Moncton (and Saint John, Amherst, Bangor…).* This paper accepts the conclusion that Halifax has not achieved a critical mass of traffic in either role which accounts for the demonstrated weakness in the warehousing and distribution function. In light of the port's inability to attract large distribution centres, the paper examines whether the transload industry can provide an intermediate solution while port traffic grows.

[5] Patrick Bohan, Port of Halifax, private communication, 2006. The remaining traffic is spread among several destinations including the Caribbean and Africa.

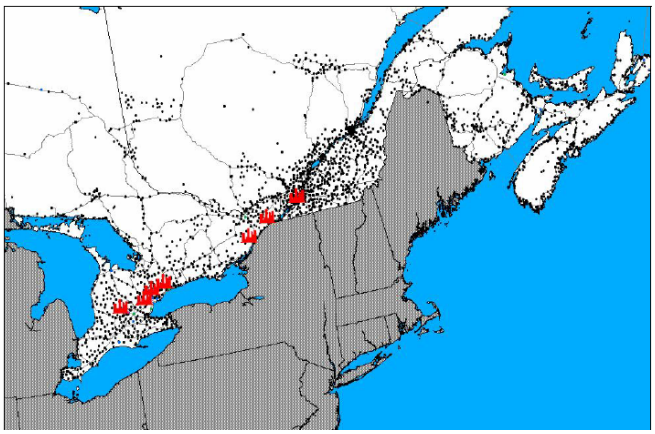
DISTRIBUTION & LOGISTICS IN HALIFAX

Halifax was established in 1749, since then people have wanted to move goods in and out of the port. During some periods, notably during both World Wars, Halifax became a world leader in transoceanic transportation. Not surprisingly then, logistics has a long and storied past in Halifax. For example, one of today's leading Halifax marine agencies, I.H. Mathers, was established 1872.[6]

Halifax has a sizeable warehouse and distribution community. This is not seen easily in publicly available statistics because warehouse and distribution functions often operate internally to a firm (e.g., Coca-Cola).[7] Still, the industry's growth and strength are easily seen by touring the current and historic business parks of Halifax. Many firms with larger distribution facilities in the Halifax Regional Municipality can be found in Appendix A.

The location of distribution centres is directly tied to population and the number of stores in a region. Consider the following:

Figure 1: Distribution Centres in Central and Eastern Canada



Source: Marinova Consulting, 2004

[6] I.H. Mathers, 2007.

[7] Internal functions may not be advertised in directories and census descriptions may fit the function of the firm more than the function of the job. This failing in data accuracy, however, will be common to all sites. As such conclusions may still be drawn from concentration ratios, or indices.

The concentration of distribution centres in the Maritimes is less than one might expect given population alone.[8] Halifax has largely lost the battle with Montreal to be the preferred port for cargo to and from Europe – historically Canada's largest overseas trading partner. Not surprisingly, most of the key distribution and logistics operations have located their Canadian offices in Montreal or in Toronto. Even within the Maritimes, cities like Moncton and Truro have been historic distribution hubs. These factors manifest themselves in Halifax's low employment concentration within the warehousing and distribution industry compared to select Canadian cities as shown in Figure 2.

Figure 2: Warehouse and Distribution Centre Concentration Index[9]

Location	Concentration Index
Canada	1.00
Quebec City	1.15
St. John's, NL	1.26
Halifax	1.34
Winnipeg	1.52
Vancouver	1.60
Saint John, NB	1.65
Montreal	1.71
Moncton	2.18
Truro	2.35

Based on top 10 NAICS codes within the grouping. Source: 2001 census

[8] Compare on the map, for example, the number of dots (distribution centres) in Chaudière-Appalaches, a wedge of Quebec south of Quebec City about 80 km along the St. Lawrence and 60 km along the US border, and all of Nova Scotia, which has over twice the population.

[9] Employment concentration is defined as the population employed in the industry divided by total population. The concentration index is a ratio of the employment concentration for a city with the employment concentration for the country.

The important point is that despite the fact that containers travelling through Halifax associated with the continental interior outnumber regional containers three to one, the warehousing and distribution industry mainly services the regional market. This discrepancy was understood as early as 1975, when the Department of Regional Economic Expansion Subsidy Agreement called for "construction of giant warehouses to house the goods and the related control systems and hardware" required for a gateway strategy.[10] Although some early studies argued against the feasibility of a Halifax Gateway, many studies now argue that the Gateway is here.[11]

Furthermore de Langen and Kymlicka suggest:

> It would seem that this scarcity of logistical services is due to the fact that many distribution functions for the Maritimes are managed from Ontario and Quebec. For example, the distribution functions for Costco and Ford are in Montreal, for Wal-Mart in Cornwall, for Home Depot in Mississauga, for Dare Foods in Toronto and for Quaker Oats in Trenton. So it might be said that developing the logistical capacity of Halifax depends on wresting that capacity away from central Canada.[12]

Using the concentration indices for Canada's other major container ports, Vancouver (1.60) and Montreal (1.71), in Table 1 as benchmarks, Halifax (1.34) could expect to grow the employment in the warehouse and distribution industry by 25% through relocation from central Canada alone.[13]

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[10] *Subsidy Agreement Canada/Nova Scotia Metropolitan Halifax-Dartmouth Area Development* (Ottawa: DREE) quoted in Norcliffe, 1980.

[11] An early detractor would be the 1978 report *Feasibility of Developing a Transportation Gateway for North America at Halifax* (Halifax, Arthur D. Little Inc. quoted in Norcliffe, 1980. The contrary view can be seen in Crowley and Kymlicka, 2006.

[12] de Langen and Kymlicka, 2007.

[13] This analysis assumes current port container volumes. There is no question that relocation will be difficult. For example, Canadian Tire is simultaneously increasing its commitment to the transload model in Halifax and building a new distribution centre in Montreal to service Quebec and Atlantic Canada. Clearly there are economies of scale for some distribution centre functions. Conversely, increasing fuel costs together with higher property costs in major urban centres may change the cost-benefit analysis.

DISTRIBUTION CENTRES & PORT ATTRACTIVENESS

Distribution and logistics are all about making freight transportation more effective. In general, improvements in freight transportation reduce costs, shorten transit times and enhance reliability. These benefits trickle down as reduced inventory levels and reduced consumer prices.

In the modern world, the role of distribution and logistics is increasingly being provided by third party logistics firms. This is because economies exist from pooling freight traffic to balance return loads, minimize the number of trips, etc. As such, logistics is not simply about the paperwork of transportation but also about warehousing and the transportation modes themselves. Even specialized logistical functions can be quite complex; many materials have a life-cycle that can encompass many firms from raw material providers through manufacturers, distributors, consumers, recyclers and back to the raw material provider. As supply chains increase in complexity, the logistics function also can encompass internal requirements like inventory management and production scheduling.

As complexity grows, the management of supply chains demands best practices. As the logistics capability of a region increases, e-commerce, e-tracking (real-time) and demand-driven (pull) distribution further drive efficiencies. Logistics balances all of these functions to minimize aggregate cost (transportation, warehousing, and handling) within the production constraints of the cargo owners. Methods for bringing these benefits vary widely and are often dependent on mode, type of freight, the life-span of the cargo, the needs of the customer, etc. The following section looks specifically at the issues surrounding ports.

The effectiveness of the logistics community is critical to shipping lines. This can be seen in the 2003 United States Maritime Administration survey of shipping lines, where the availability of chassis (trucks), turnaround time and overall efficiency were listed in the top ten areas for improvement of Canadian ports.[14] Effectiveness is most often accomplished through

[14] United States Marine Administration, 2004.

competition,[15] so shipping lines want options to control costs. As such, the size, efficiency and effectiveness of the logistics and distribution community associated with a port are all viewed as key aspects of the port.

Many distribution centres have substantial logistical capacity and profit from economies of scale, hence moving them would be difficult. Furthermore, the major customers (and sometimes owners) of distribution centres are third party logistics firms that have large economically efficient sizes. This volume derives from the fact that many shipping slots are pre-sold in bulk.

Distribution centres create the volume required for cargo owners to land or ship products from local ports and therefore reduce trucking costs.[16] This equivalence of ports is derived from liner conference pricing through the *Shipping Conferences Exemption Act* (1987). It means that, for a conference carrier, international shipping rates do not vary from port to port within a country (e.g., shipping costs from Rotterdam to Montreal are not substantially different than shipping costs from Rotterdam to Halifax).[17]

This leaves port attractiveness and distribution centres to feed off each other. The more a port fulfills a distribution centre role, the more attractive it becomes as a port. The more attractive it becomes, the more firms want to locate their distribution and logistics capabilities there; a form of virtuous circle develops.

The development of just-in-time deliveries in North America and the corresponding need for warehouse space can be traced to better supply chain management and regional cluster

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[15] This stems from Porter's Diamond which holds that innovation driven by competition rather than generally endowed factors of production produces competitive advantage. For empirical proof, see: http://www.statcan.ca/Daily/English/061204/d061204c.htm

[16] Shipping Conference pricing can be circumvented through a service contract. This is "an agreement in which a shipper commits a certain minimum volume of cargo over a fixed time period to conference member lines in exchange for a guarantee in respect of rates, and/or service commitments." Transport Canada, 1999

[17] The influence of the conferences is diminishing. Rates are kept in check through the use of service contracts, removing arbitrage opportunities available by servicing a destination using multiple routes and by a growing list of non-conference shipping lines. For example, only Hapag-Lloyd and OOCL remain in the Canada-United Kingdom Freight Conference, the Canadian North Atlantic Westbound Freight Conference, the Canadian Continental Eastbound Freight Conference, the Continental Canadian Westbound Freight Conference, and the Canadian Continental Eastbound Freight Conference. See Heaver, 2001, for more detail.

integration. The cost advantage of Asian outsourcing has produced longer, slower and less predictable supply chains. A resurgence of warehousing has developed as a hedge against these risks. Leachman's 2005 *Port and Modal Elasticity Study* "showed that national retailers save 18 per cent to 20 per cent on their inventory costs by shipping their high-value products to Southern California and using local warehouses to manage, consolidate and transload cargo before rail or truck delivery to various U.S. hubs. This process cuts weeks off the lag between hub level sales predictions and the arrival of the goods, lowering the inventories needed to cover forecasting errors. Centralized warehousing also reduces the inventory needed to cover the risk that some cargo deliveries will be interrupted along the supply chain."[18]

Logistics is not simply about getting a container to a distribution centre. The containerization of freight transportation has brought huge efficiencies in international trade. However, there remain questions of mode (e.g., train versus truck) and there is a limit to the degree that business processes can be optimized around 20 foot or 40 foot ISO standard sizes. As such distribution and logistics firms optimize local freight transport to meet the needs of their customers.

In this vein, the strength and capacity of local distribution and logistical firms produce efficiencies through economies of scale. World-wide, third-party logistics firms now comprise a $100 billion industry which handles a quarter of shipment volume in Europe and almost as much in the U.S.[19] For example; local customers could share truck-loads with other local firms, exporters could reduce trucking costs by using one 53 foot container rather than two 40 foot containers to ship manufactured parts and everyone reduces costs by triangulating a truck route among Halifax, Boston and Montreal rather than pay for three return trips.[20]

As suggested above, equipment must be returned. Truckers bring their rigs home, rail companies keep cars on a particular rotation and shipping lines return containers. Economic opportunity cost is large when demand for equipment exists where there is no supply. Distribution and logistics

[18] Summarized by John Husing, Ph.D. in Goods Movement: Challenge, Opportunity, Solution in Southern California available at:
http://www.scag.ca.gov/publications/pdf/2006/SOTR05/SOTR05_JHusing_Essay.pdf.
[19] Bot and Neumann, 2003.
[20] Sometimes referred to as "cargo rotation."

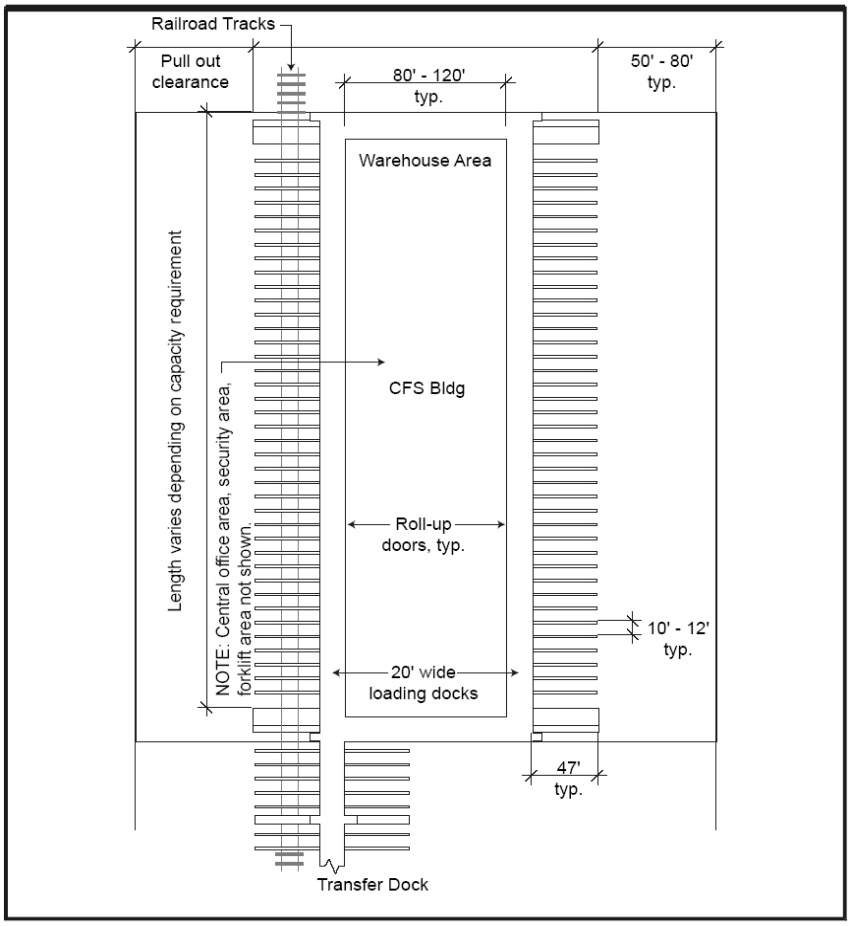
firms work to ensure that equipment is available to service demand. This can include strategies like off-hours delivery to ensure availability in congested corridors. Where a single distribution centre might only import, logistics firms can halve the cost of using the container by using the same container to export other goods. Maintaining this balance across customers is the great logistics value-add.

TRANSLOAD & CONSOLIDATION

Transload is a generic term for unloading freight from one land-based mode and reloading it into another. For the purposes of this paper transload refers to unloading an international ISO-compliant sea container and reloading it into a domestic 53 foot trailer (or vice versa). If the loading takes freight from several containers/trailers it is called consolidation. The primary function of a transload facility is the repacking of goods to optimize returns on throughput.

Transload activity typically takes place in specialized facilities as shown in Figure 3:

Figure 3: Typical Consolidator or Transloader Facility



Source: Tioga Group, 2003

In a sense all distribution centres provide a transload capability; however, optimization of design on throughput rather than storage characterizes transload facilities. Some large distribution centres may provide specialized transload facilities. Equally, larger transload facilities may provide some warehousing capability as a secondary revenue stream. This may be necessary because of the availability of trucks to remove the freight, or the cargo owner determines the optimal distribution of the goods.

The primary issue is the cost equation where the cost savings of running fewer trucks exceeds the costs of additional unpacking and repacking (a list of activities under both models is available in Appendix B).

In addition, there are two location configurations: one with the transload facility inland and the other with the facility on the dock. In the first case, a shuttle service takes containers from the port to an inland facility; it need not be a full-blown terminal. The downside is that transloaded cargo has the extra lifts/handling to get it inland. If the shuttle service is performed by rail, the upside is that trucks only go partly into town. Even if the shuttle service is by truck, it may be possible to improve truck utilization by scheduling the shuttle in the evening.[21]

A second configuration has the transload facility right on the dock: no extra lifts, no extra costs. The downsides are the need for on-dock space, which is a particular problem in Halifax. The upside is fewer trucks on city roads (although a rail shuttle would remove even more).[22]

Asset utilization is critical to viability. Capital costs plus the extra lifts must be offset by efficiencies in truck use and this can only happen with volume. For a type of cargo with sufficient volume, the transloading activity can be viewed as a fixed transaction cost. Under this condition, some general comments can be made.

[21] Indeed, this is a key motivator for the inland terminals planned around Auckland, New Zealand. (Marinova Consulting, 2006). Currently Halifax operates only 19 hours per day, which limits this potential benefit.
[22] Truck removal was a key motivator for the Coast 2000 Terminal in Vancouver. (Marinova Consulting, 2006)

1) One-way transloading (no return cargo) becomes cost-effective at reasonably small distances (over 100 km). This is because the base cost to engage a truck is of the same order of magnitude as the transloading cost. Any excesses are made up for quickly in fuel and labour savings by running fewer trucks.

2) Two-way transloading (return cargo) is much more expensive. The truck is already engaged and so backhaul transload activities must be off-set by fuel and labour savings alone. This results in transload solutions being cost-effective against 40 foot ISO containers only over long distances (e.g., greater than 700 km).

3) Although two-way transloading does not appear competitive against rail, this analysis assumes that the source/destination of the cargo is in close proximity to the intermodal rail yard. This assumption is often not true. In fact, rail density in North America is quite low. As such, the calculation should compare a transload solution against rail plus a shorter truck haul for each container. Short sea shipping is similarly confined to particular yards and a similar line of competitive analysis applies.

WHY NOT TRANSLOAD

Issues with transload depend on the rationale. The key questions have to do with the viability of alternatives (rail and short sea shipping), proximity to hubs and the economic benefit accrued from delivery of the cargo.

Since ports tend to be located at the centre of urban areas, they compete with other urban needs for zoning and political support.

> "First, there is only a finite amount of water and land available, coupled with many competing interests. It is important that a future plan for the harbour determine the right balance among land uses – commercial/industrial marine uses, transportation, recreational, residential, institutional and environmental. This requires an analysis of site specific development opportunities and constraints, taking into account factors such as harbour dependent needs, the relative importance of uses, intensity of uses, infrastructure requirements, community compatibility/impacts and environmental considerations. "[23]

[23] City of Halifax, 2004

Opposition, especially against trucks on commuter or residential roads, often leads to compromise rather than optimization:

> "Mitigatory measures may include the following:
> • Restricting the intensity of use (eg.) light industrial vs. heavy industrial
> • Landscaped perimeter buffer areas (screening) and solid fencing
> • Directional lighting
> • Noise abatement measures for adjacent buildings (soundproofing)
> • Limitations on hours of operation
> • Road access locations and truck routes
> • Restricting new residential use from encroaching on existing and potential sites for marine industrial development, through appropriate zoning, buffering and noise abatement construction techniques."[24]

Large-scale solutions like dedicated truck lanes do not receive political support and so these constraints drive freight support activities further inland.

The bind is clear; warehousing space at the port itself is prohibitively expensive, yet removing the transload centre from the port increases truck traffic and associated costs. In some cases, urban expansion can negate the land cost advantage of distant facilities. This is best seen in the transload facilities along the Fraser River in Vancouver which were built before 1992 and also service the terminals along Burrard Inlet.

ON BALANCE

After having recognized the barriers, it is clear that transload has become a strategic piece in the evolution to intermodal traffic. For example, the US Senate introduced the *Freight Rail Infrastructure Capacity Expansion Act* in July 2006 which provided for a 25 per cent tax credit for expenditures on transload facilities among other assets.[25]

[24] Ibid.
[25] Commonwealth Business Media, Journal of Commerce, NY, July 27, 2006, pg. 1

This demand for new transload capabilities is being driven by retailers that face increasing volumes and need tighter control of their supply chains. Transload provides a solution without the additional capital expense of erecting a dedicated warehouse.[26] This is especially true when the transload facility is run by a third party logistics firm that can do detailed tracking along the complete supply chain. Not surprisingly, transload has seen increasing participation by multinational shipping lines and third party logistics firms as they seek to provide one-stop shopping to their clients.[27]

In recent years, efficient use of truck capacity has been the driving force for development of transload facilities in Vancouver – both as stand-alone, third party facilities and also as attachments to traditional distribution centres.[28] This factor can only increase in importance given the acute driver shortages across the country.

A critical issue in the evolution of transload facilities is location. Many of the early sites for transload were ports with large population bases. Initially these facilities were used to service distant markets, but recently new transload centres have been established near inland hubs (although not so near that land costs rise substantially).[29]

[26] Chiarello, 2006
[27] Monroe, 2006
[28] Bob Hayter, Port of Vancouver, 2007, private communication.
[29] Mongelluzzo, 2006

THE HALIFAX SITUATION

The objective is to enhance distribution and logistical capabilities both for their own sake and to attract new players. Today a significant percentage of this role is performed in Montreal and Toronto for the Maritime regional market. Transload is an important capability required for repatriation of the logistics function. Halifax, with only two transload centres, is playing catch-up in the industry. For example, Vancouver has sixteen transload centres on approximately three times the volume of Halifax.[30] The benefits to distribution and logistics can be seen in Figure 4. .

Figure 4: Benefits of transload facilities

Direct Transload Benefit
Reduce consumer costs by avoiding shipping the freight from Halifax to Montreal and back to the Maritimes.
Expanded range of viability for trucks especially for lightweight goods. For example, only one 53 foot trailer might handle goods from two 40 foot containers.
Reduced container shipping costs through use of overweight containers.
Improved viability of existing local truck and short-sea break-bulk services though access to break-out cargo. This should help smaller ports.
More options for modal choice should reduce risk and may reduce costs under some circumstances.
Attract new Asian import traffic. Halifax runs a surplus with Asia. Enhancing this capacity would significantly improve the attractiveness of the port.
Improved container availability for exporters. Potentially this is the biggest benefit for the region since new manufacturing will create economic benefits far in excess of the transportation component.

[30] Davies, 2006

Logistics Capability Benefit
The scheduling and routing of freight through the transload would be done locally. Initially this produces high multiples of increased capability; consider that each inbound user of a transload facility has multiple destinations, possibly with multiple stops/routes.
Expanded range of effectiveness for local logistics firms.
Asset management capabilities. Warehousing capabilities for consolidation function.
Greater variety of transportation options. Warehousing capabilities for consolidation function.
Increased options for asset management including flexible routing.
Greater capability in dealing with foreign markets.
Whole new supply chains to manage!

Further analysis is required to balance competing cost factors. For example, locating facilities on the dock itself incurs large land costs, but substantially reduces intermediary costs and the number of trucks on urban roads. Conversely, an inland location like Truro would leverage the existing logistics and distribution capabilities and a much lower cost but would incur substantial intermediary costs.

Although not central to this analysis, there is increasing attention paid to the environmental impact of trucking. Both rail and short sea shipping consume considerably less fuel per tonne-mile. As such, if a transload facility is viable because it takes traffic away from rail or short sea shipping, then it would result in a net increase in energy consumption and, presumably, emissions. However, if transloading is viable because it replaces existing traffic in ISO containers (20 foot or 40 foot) then it will result in a decrease in truck traffic with corresponding decreases in energy consumption, emissions and urban congestion.

A few ports have had considerable success after attracting distribution centres run by large retailers like Wal-Mart or Home Depot. At this time, Halifax would have difficulty attracting a distribution centre. The primary reason is that the market is too small. A distribution centre services one firm, primarily for goods travelling in one direction (i.e., to the customer). As such, a port that tries to attract a distribution centre needs to be very close to a large market (e.g., Norfolk) or on several corridors leading to markets (e.g., Savannah). In contrast, a transload facility needs a smaller aggregate market since it services many firms and derives part of its income from balancing freight flows.

It is possible that as the economy grows, the distance over which trucking is economically viable grows and inter-provincial barriers to trade are removed, the attractiveness of Halifax to a large retailer will be sufficient to warrant a distribution centre.

CONCLUSION & RECOMMENDATIONS

Transload provides an opportunity to extend the viability of trucking and better match imports and exports. Indeed recent developments seem to support its development. The private sector has sent strong signals that the gateway model is worth pursuing and that the traffic will support it. Specifically:

- Ceres Global (operator of the Fairview Cove Terminal and owned by NYK Lines) recently purchased two more post-Panamax cranes and leased additional land to handle additional traffic in 2007.
- A new transload facility to be operated by Consolidated Fastfrate is under construction in the Burnside industrial park
- CN has spent $25 million on the line between Halifax and Montreal to allow for longer trains.
- CN has announced it is looking at the feasibility of developing its own transload facility.
- Macquarie Investments (partner and/or operator in several world-class ports) has purchased Halterm (operator of the South End Terminal) for $172.8 million (CDN), a significant premium over stock prices for other terminal operators.
- The Port of Halifax is spending $1.5 million to deepen the South End Terminal to 16 metres and $12.5 million for an advanced security network.

In this light, the expansion of the distribution and logistics function, especially as it relates to transload, will make fuller use of the Port through:

- Load balancing
- Quick return of the container to the shipping company
- More efficient distribution

Even if the size of the prize is not fully understood, it is clear that demand for this service is immediate.

Recommendation 1: Provide an adequate environment for transload. Primarily this means acquiring and zoning adequate space that ideally:

1. is adjacent to the TransCanada,
2. is designed to be accessible by both traditional rail and "road trains,"
3. leverages traditional synergies with bonded customs warehouses or "container freight stations" (short-term warehouses),
4. is away from residential areas, and
5. is secured to both US and Canadian standards.

Recommendation 2: Attract private sector investment through publication of a business case which quantifies the viable range of trucking and its tolerance to changes in fuel costs, exchange rates, etc.[31]

Again, using Vancouver and Montreal as benchmarks, aggressive pursuit of transload could extend the market reach of the port and support a growth in the warehouse and distribution industry in the region, possibly up to 25 per cent.

[31] It would also behoove government development agencies to understand the relationship between intended products and other economic drivers (e.g., jobs, or synergies with other functions found in logistic parks or inland terminals). For example, bulk commodities like wood pulp or ores tend to create fewer jobs than manufactured goods like navigational equipment or furniture.

APPENDIX A

Firms with sizeable distribution facilities in the Halifax Regional Municipality

In Lakeside:

1. Atlantic Wholesalers (Loblaw's) – food wholesale, three facilities
2. McKesson – medical supplies
3. Eastern Foodservice – food wholesaler (meat) mainly servicing HRM
4. Coca-Cola – soft drinks

In Bayers Lake

1. NSLC (Nova Scotia Liquor Commission) - liquor
2. Oland Breweries - beer
3. Clarke Transportation – logistics, warehousing and distribution

In Atlantic Acres

1. SLH Transportation - logistics, warehousing and distribution
2. Sable Warehousing and Distribution (Day & Ross)
3. Hostess/FritoLay – snack food
4. Bransam Logistics Services / Eisner's Transport
5. Ben's Bakery (Maple Leaf Foods) – baked goods

In Burnside

1. Armour Trucking – logistics, warehousing and distribution including transload, three facilities
2. Nedco (Rexel Group) - electrical and datacom
3. Cascade – paper
4. Great Northern Recycling – ships Tetrapaks from NS & NB offshore for recycling
5. Consolidated Fastfrate – transload, logistics, warehousing
6. Atlas Cold Storage (Eimskip) – two refrigerated warehouses
7. Hershey – snack food
8. Weyerhaeuser - wood products
9. Maritime-Ontario – logistics, warehousing and distribution
10. Midland (Irving Group) – logistics, warehousing and distribution
11. Thornes (Irving Group) – Electric Equipment & Supplies-wholesale
12. Scotia Recycling – ships Tetrapaks from PEI & NL offshore for recycling
13. CanWel – building materials

14. Day & Ross – logistics, warehousing and distribution
15. Trebley Warehousing – storage and distribution
16. ASCO – oil & gas and telco
17. Bluewater – oil & gas
18. Halifax Sufferance Warehouse (Livingston International, customs warehouse)

There are many smaller facilities and some firms do commercial warehousing and distribution as a sideline (e.g., moving companies).

APPENDIX B

The decision to use a transload facility means the cost of additional steps is less than the savings the come from using fewer trucks. The following two tables compare the steps in the case where traffic flows both ways and where there is only one-way traffic.

Process steps for two-way traffic	
No Transload	**Transload**
Load 3 40’ containers to truck	Load 3 40’ containers to trucks
	3 trips from port to transload facility
	Lift/Destuff 3 Containers
	Lift/Stuff 2 53’ containers
3 trips from port to destination	2 trips from transload facility to destination but poorer gas mileage per truck
Lift/Destuff 3 40’ containers	Lift/Destuff 2 53’ Containers
Lift/Stuff 3 40’ containers	Lift/Stuff 2 53’ Containers
3 trips from destination to port	2 trips from destination to transload facility but poorer gas mileage per truck
	Lift/Destuff 2 53’ Containers
	Lift/Stuff 3 40’ containers
	3 trips from transload facility to port
Load 3 40’ containers to ship	Load 3 40’ containers to ship

Process steps for one-way traffic	
No Transload	**Transload**
Load 3 40’ containers to truck	Load 3 40’ containers to trucks
	3 trips from port to transload facility
	Lift/Destuff 3 Containers
	Destuff 3 40’ containers
	Lift/Stuff 2 53’ containers
3 trips from port to destination	2 trips from transload facility to destination but poorer gas mileage per truck
Lift/Destuff 3 40’ containers	Lift/Destuff 2 53’ Containers
3 trips from destination to port	2 trips from destination to transload facility (no gas penalty)
	3 trips from transload facility to port
Load 3 40’ containers to ship	Load 3 40’ containers to ship

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